Fig.1

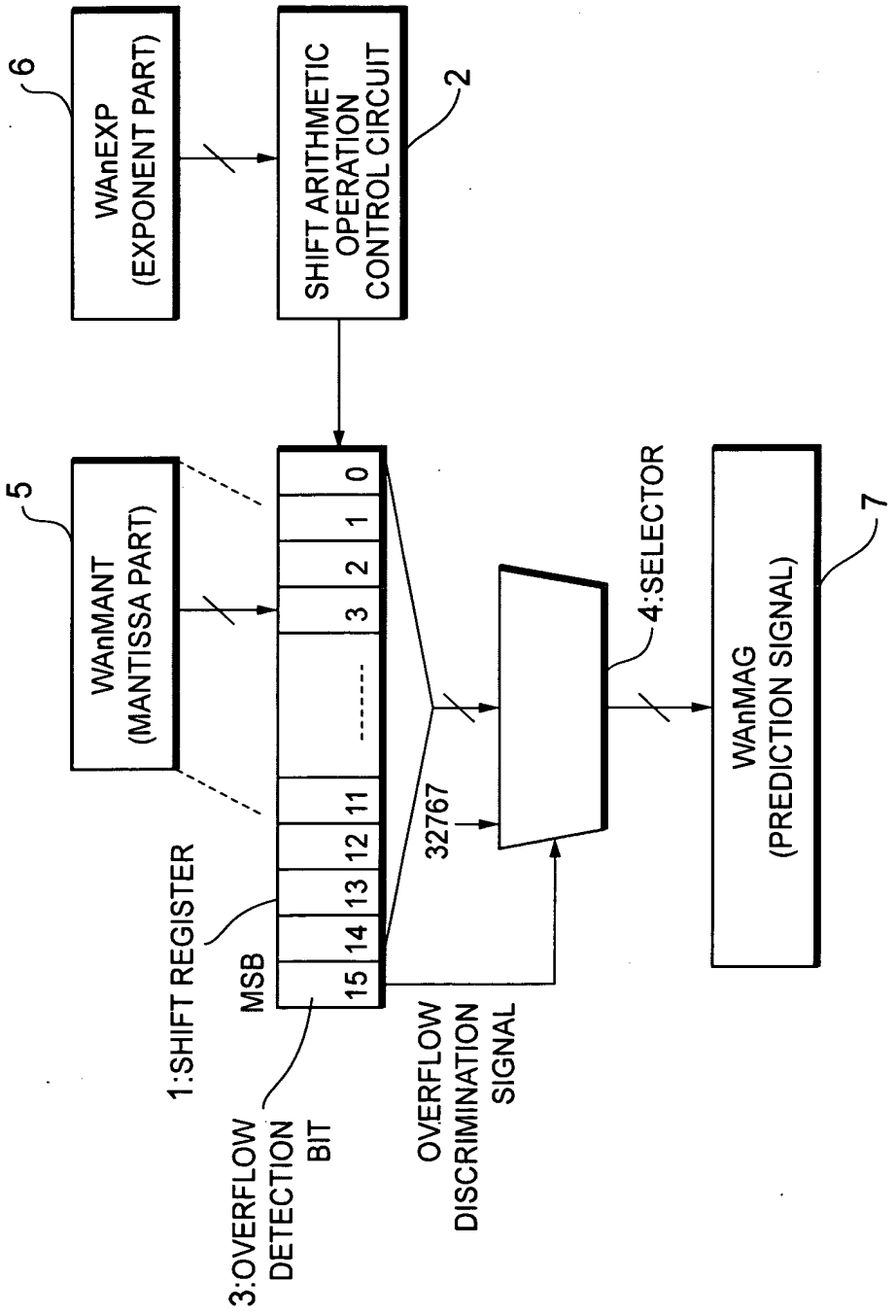

6
WAnEXP
(EXPONENT PART)
SHIFT ARITHMETIC
OPERATION
CONTROL CIRCUIT
2
5
WAnMANT
(MANTISSA PART)
0
1
2
3
11
12
13
14
15
MSB
1:SHIFT REGISTER
3:OVERFLOW
DETECTION
BIT
32767
OVERFLOW
DISCRIMINATION
SIGNAL
4:SELECTOR
WAnMAG
(PREDICTION SIGNAL)
7

Fig.2

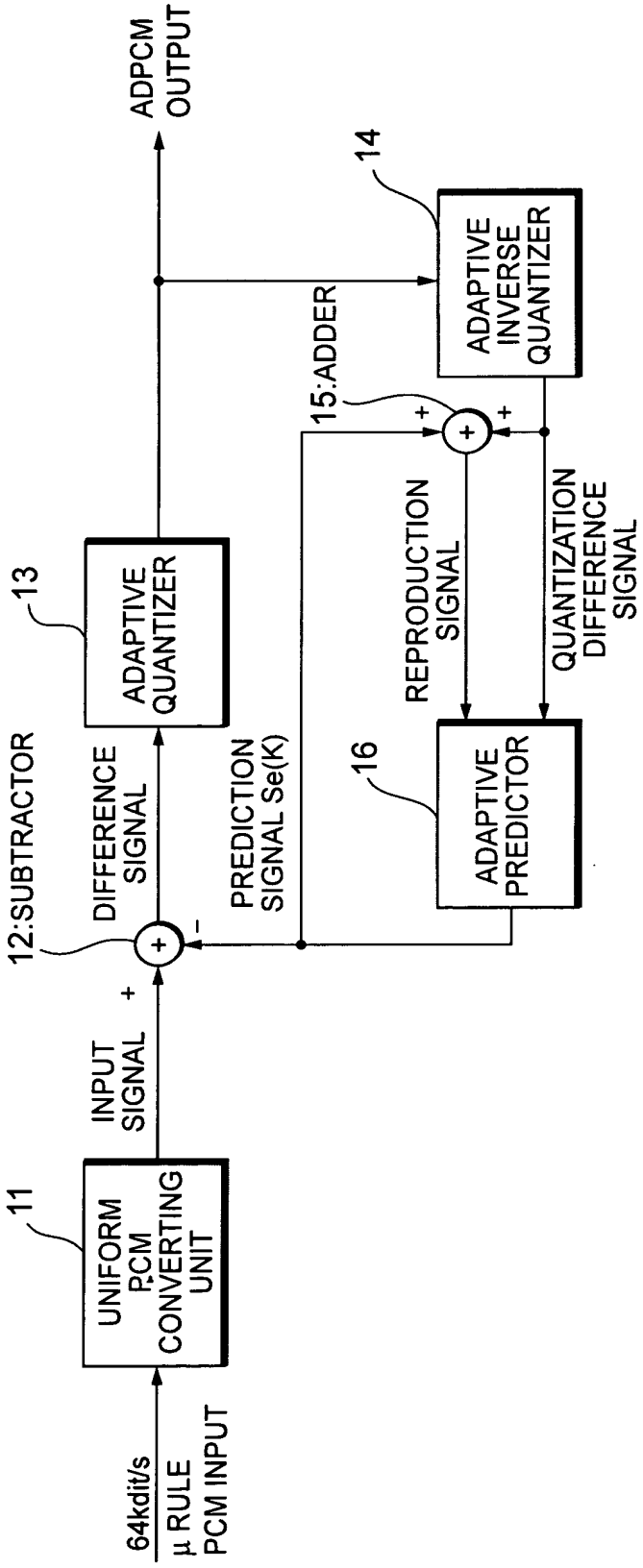

64kbit/s
μ RULE
PCM INPUT
11
UNIFORM PCM CONVERTING UNIT
INPUT SIGNAL
+
12:SUBTRACTOR
DIFFERENCE SIGNAL
-
13
ADAPTIVE QUANTIZER
ADPCM OUTPUT
14
ADAPTIVE INVERSE QUANTIZER
15:ADDER
+
+
REPRODUCTION SIGNAL
QUANTIZATION DIFFERENCE SIGNAL
PREDICTION SIGNAL Se(K)
16
ADAPTIVE PREDICTOR

Fig.3

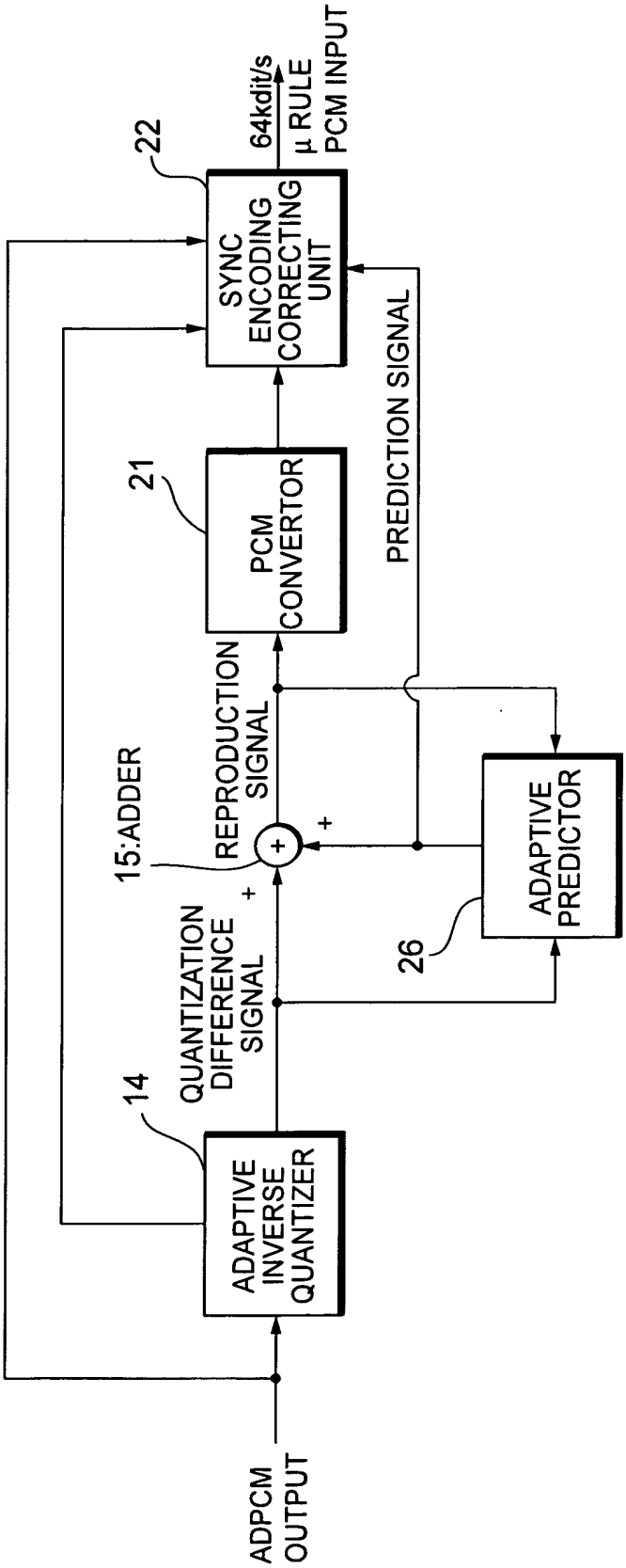
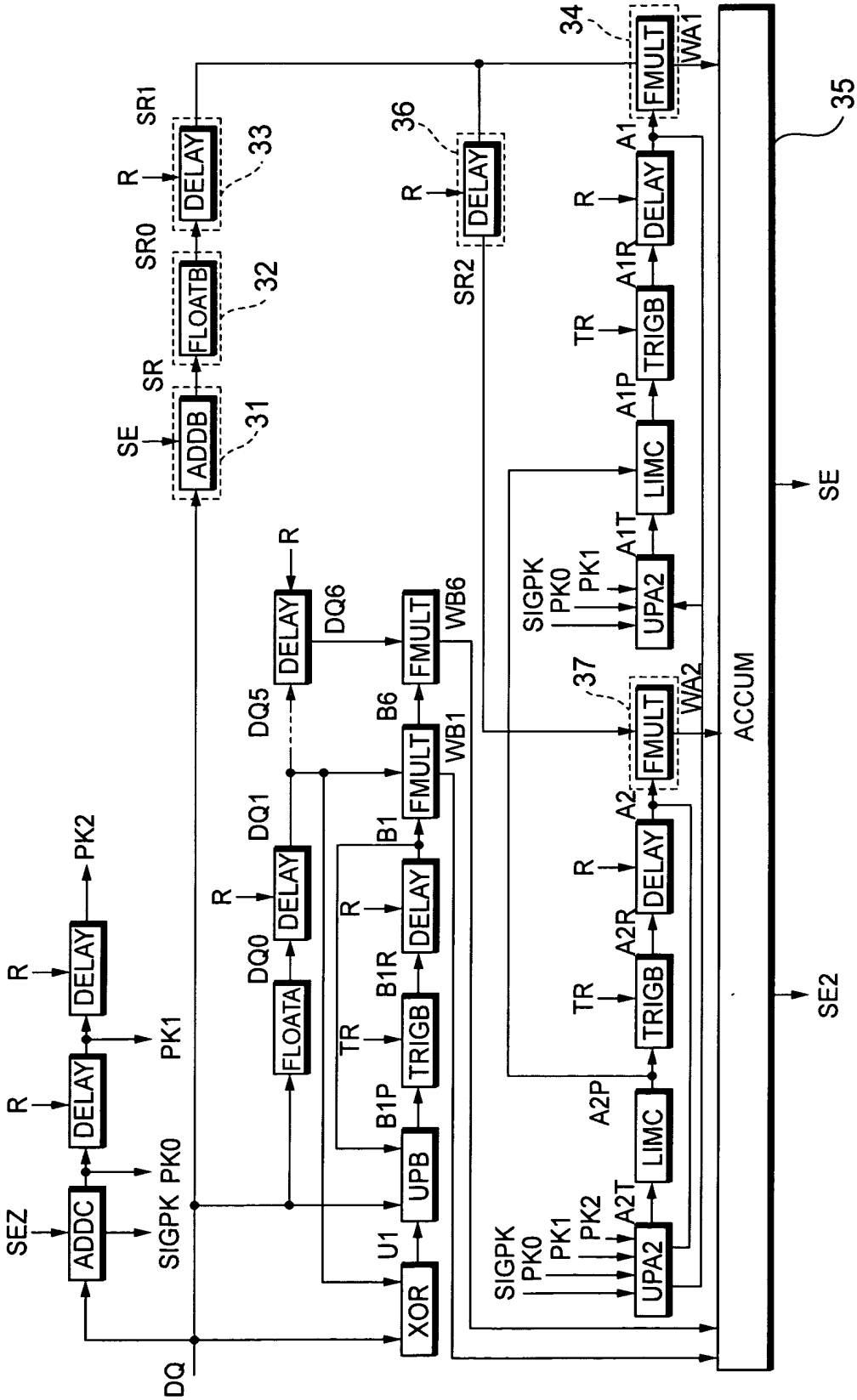

ADPCM OUTPUT
ADAPTIVE INVERSE QUANTIZER
14
QUANTIZATION DIFFERENCE SIGNAL
15:ADDER
REPRODUCTION SIGNAL
PCM CONVERTOR
21
SYNC ENCODING CORRECTING UNIT
22
64kbit/s
μ RULE PCM INPUT
PREDICTION SIGNAL
ADAPTIVE PREDICTOR
26
+
+
+

Fig.4


SEZ
ADDC
SIGPK
PK0
PK1
PK2
DELAY
R
DQ
XOR
U1
UPB
B1P
TRIGB
TR
B1R
B1
FMULT
WB1
DQ0
FLOATA
DQ1
DQ5
DQ6
WB6
B6
SE
ADDB
SR
SR0
FLOATB
SR1
SR2
31
32
33
34
35
36
37
WA1
WA2
A1
A1R
A1P
A1T
LIMC
UPA2
A2
A2R
A2P
A2T
ACCUM
SE2

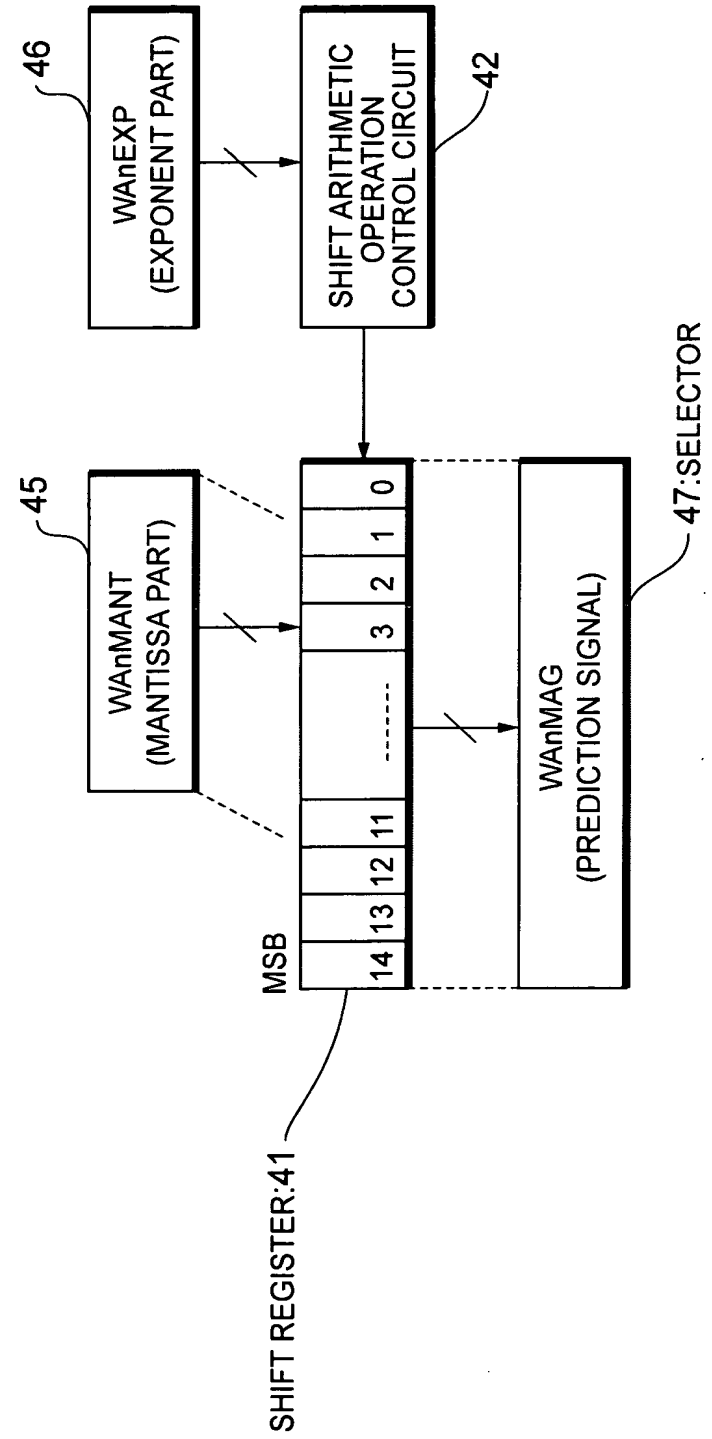
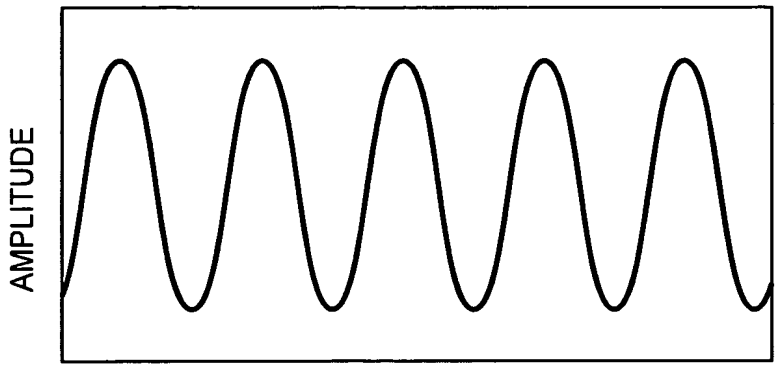

46
WAnEXP
(EXPONENT PART)
SHIFT ARITHMETIC
OPERATION
CONTROL CIRCUIT
42
45
WAnMANT
(MANTISSA PART)
MSB
14
13
12
11
3
2
1
0
WAnMAG
(PREDICTION SIGNAL)
47:SELECTOR
SHIFT REGISTER:41

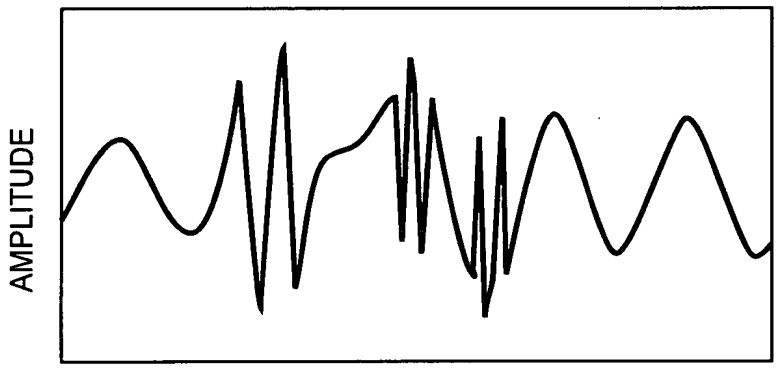
Fig.5

Fig.6(a)



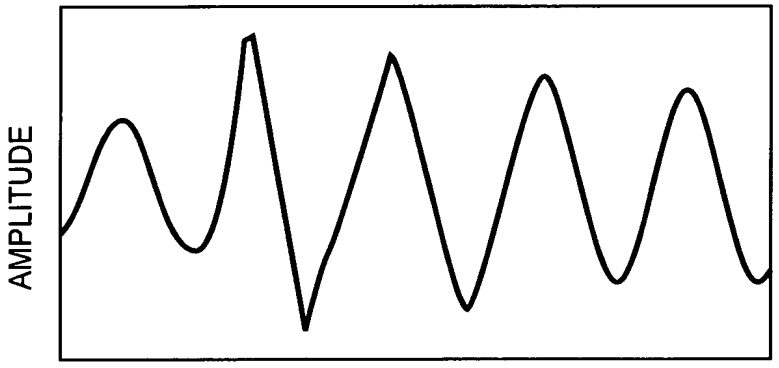
DECODER OUTPUT WHEN NORMAL DATA HAS BEEN DECODED

Fig.6(b)



DECODER OUTPUT WHEN DATA HAVING ERRORS HAS BEEN DECODED

Fig.6(c)



DECODER OUTPUT IN THE EMBODIMENT 1

Fig.7

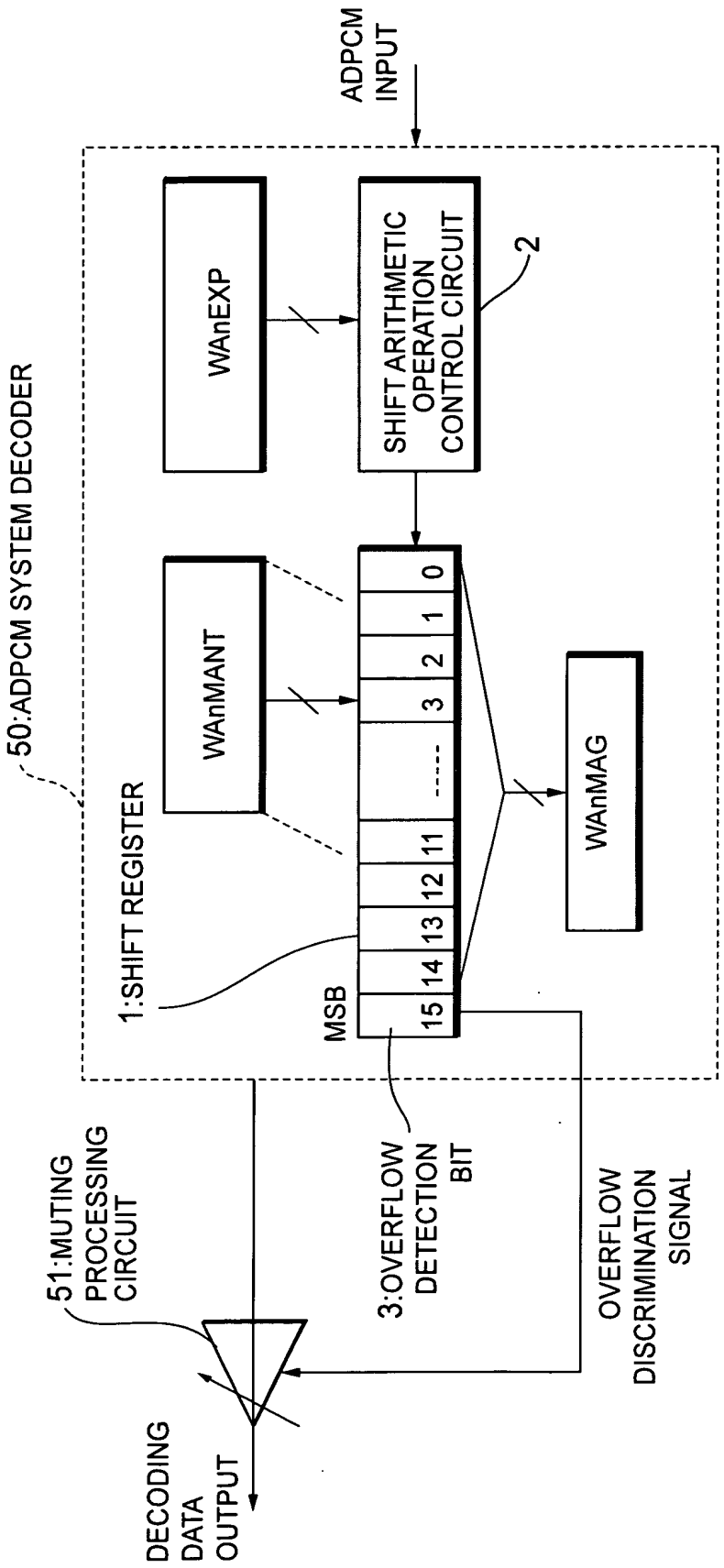

ADPCM INPUT
50:ADPCM SYSTEM DECODER
WAnEXP
SHIFT ARITHMETIC OPERATION CONTROL CIRCUIT
2
WAnMANT
1:SHIFT REGISTER
0
1
2
3
11
12
13
14
15
MSB
WAnMAG
51:MUTING PROCESSING CIRCUIT
3:OVERFLOW DETECTION BIT
OVERFLOW DISCRIMINATION SIGNAL
DECODING DATA OUTPUT

Fig.8

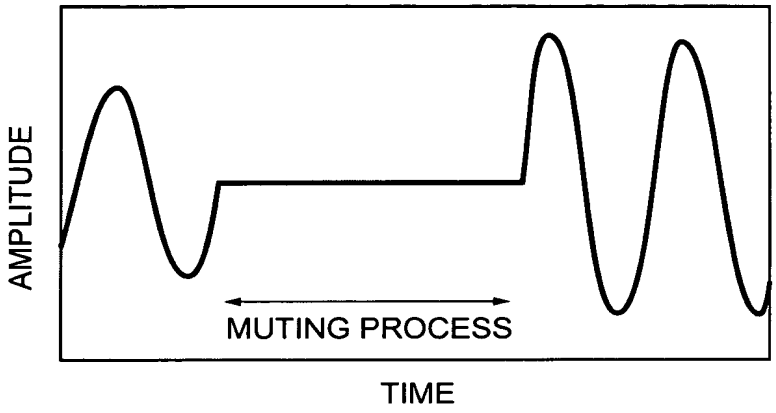


Fig.9

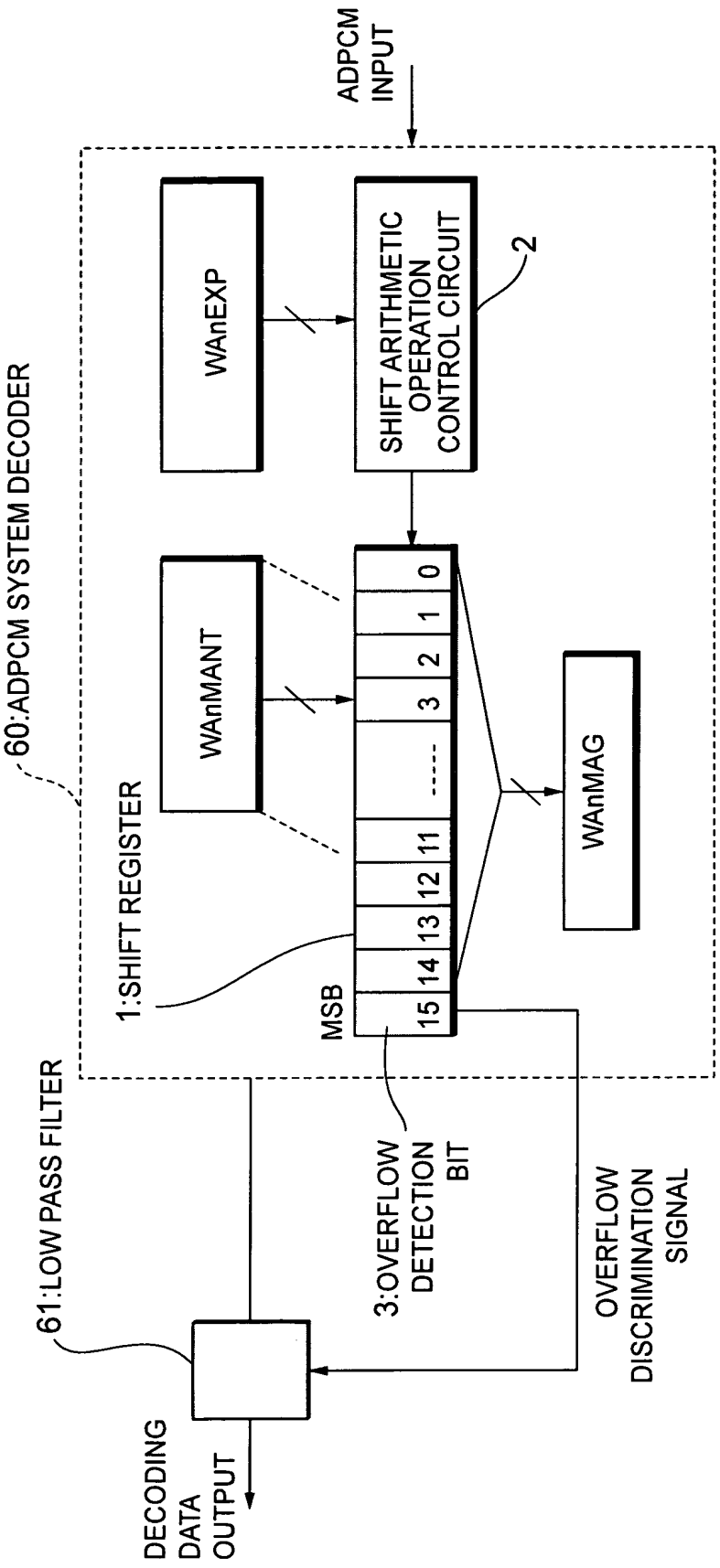

ADPCM INPUT
60:ADPCM SYSTEM DECODER
WAnEXP
SHIFT ARITHMETIC OPERATION CONTROL CIRCUIT
2
WAnMANT
1:SHIFT REGISTER
0
1
2
3
11
12
13
14
15
MSB
WAnMAG
61:LOW PASS FILTER
3:OVERFLOW DETECTION BIT
OVERFLOW DISCRIMINATION SIGNAL
DECODING DATA OUTPUT

Fig.10

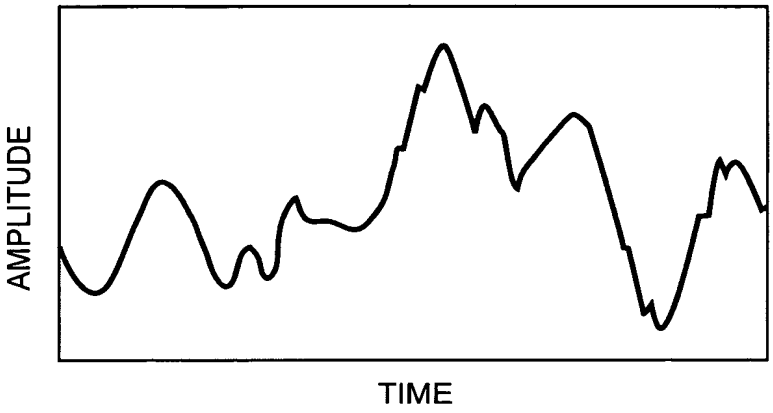


Fig.11

17 NORMALIZED INPUT RANGE OF QUANTIZER $\log_2\|D(k)\|-Y(k)$	18 $\|D(k)\|$	19 NORMALIZED OUTPUT OF QUANTIZER $\log_2\|D(k)\|-Y(k)$
[4.31,+∞)	15	4.42
[4.12,4.31)	14	4.21
[3.91,4.12)	13	4.02
[3.70,3.91)	12	3.81
[3.47,3.70)	11	3.59
[3.22,3.47)	10	3.35
[2.85,3.22)	9	3.09
[2.64,2.95)	8	2.80
[2.32,2.64)	7	2.48
[1.95,2.32)	6	2.14
[1.54,1.95)	5	1.75
[1.08,1.54)	4	1.32
[0.52,1.08)	3	0.81
[-0.13,0.52)	2	0.22
[-0.96,-0.13)	1	-0.52
[-∞ ,-0.96)	0	-∞

INPUT/OUTPUT CHARACTERISTICS OF
THE ADAPTIVE QUANTIZER